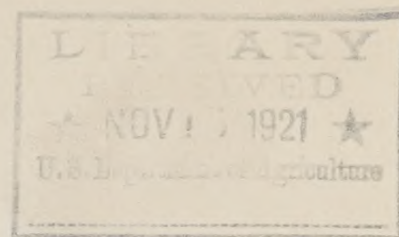


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REPORT ON THE MEMORANDA FROM BUREAU CHIEFS ON  
AGRICULTURAL PROGRESS.

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REPORT ON THE MEMORANDA FROM BUREAU CHIEFS ON  
AGRICULTURAL PROGRESS.

The following report attempts to present in a single statement the main ideas in the recent memoranda of the Bureau Chiefs of the Department of Agriculture on "What is Agricultural Progress and How is it Measured?"(1) Insofar as the Bureau Chiefs dealt with the same phases of the subject, they presented no widely divergent points of view so that this report may be tentatively taken as approximately expressing the opinion of the Department as a whole.(2)

1. The Problem. Since the estimation of agricultural progress involves a comparison of agricultural success at successive periods of time, it was generally evident from the memoranda that the problem under consideration could be more conveniently restated in the form "What is Agricultural Success and How is it Measured?"

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- (1) No mention is made in this report of recommendations or suggestions that were made by a Bureau Chief with regard to the special work of his own Department.
- (2) The nearest approach to a difference of opinion was found in the degree of optimism or pessimism with which the present organization of agriculture was regarded. It should be noted, moreover, that Bureau Chiefs may not agree with statements concerning phases of the subject which they did not treat.





2. The Nature of Agricultural Success. It was evident from the memoranda that agricultural success means quite different things to the farmer, to the urban population, and to posterity. To the farmer, agricultural success means the possibility of maintaining a high standard of life on the farm; to the urban population agricultural success means the furnishing of food stuffs at a low cost; while from the point of view of posterity, agricultural success means an increase in the amount and fertility of the land available for crop production.

Since it is the function of the Department of Agriculture to further the agricultural interests of the whole nation both in the present and the future, agricultural success for us involves all three factors, -

- a. The maintenance of a high standard of life on the farm.
- b. The production of food stuffs and other agricultural products at a low cost to the consumer.
- c. The transmission to posterity of arable land increased in fertility and extent.

3. Conflict between the Three Requirements Necessary for Agricultural Success. The fundamental conflict between the above three demands for a successful agriculture was pointed out. Thus it is possible temporarily to raise the standard of life on the farm by depleting the fertility of

THE HISTORY OF THE UNITED STATES

The history of the United States is a story of growth and development. It begins with the first settlers who came to the continent in search of a new home. These early pioneers faced many hardships, but they persevered and built a nation that would become one of the most powerful in the world. The story of the United States is a story of the struggle for freedom and the pursuit of the American dream. It is a story of the many men and women who have sacrificed and fought for the principles of liberty and justice for all. The history of the United States is a story that continues to unfold, and it is a story that we all have a part in. As we look back on the past, we can see the many challenges that have been overcome, and we can see the progress that has been made. We can see the many ways in which the United States has shaped the world, and we can see the many ways in which the world has shaped the United States. The history of the United States is a story that is full of hope and possibility, and it is a story that we can all be proud of.



the soil. This practice has, indeed, been so common in this country as to acquire the familiar name of "soil mining". A well-known antagonism also exists between the maintenance of a high standard of life on the farm and the furnishing of agricultural products to the urban population at a low cost, since in the mutual struggle which accompanies the exchange of farm products for manufactured articles, it is obvious that any advantage gained by the farmer is lost to the urban worker. If by an alteration in the methods of exchange the farmer is able to get more manufactured goods for his farm products, his standard of life is raised and the standard of life of the urban population is correspondingly lowered. Indeed, it will be seen in general that by denying the demands of any one of the three requirements mentioned above, it is possible either temporarily or permanently to satisfy more fully the demands of the other requirements.

It was pointed out, that the existence of such fundamental conflicts, between entirely legitimate but opposing interests is a well-known phenomenon in social ethics. The shallow optimism which attempts to ignore these conflicts or pretend that they do not exist was considered to be both harmful and prevalent.



4. Nature of the Possible Solution of Such Conflicts.

It was pointed out that, when such fundamental conflicts arise, simple and Utopian solutions can not be found. The only thing that can be done is to strive for a compromise between the conflicting interests which shall be as fair and just as human intelligence can make it.

Attention was called to the fact that such a solution is not a simple, permanent achievement which can be made once and for all, but is rather a continuous process of adjustment which changes, not only with changing economic conditions, but more especially with the changing sense of the community as to what is fair and just.

It was further pointed out that such a solution can be most successful when each of the parties to the conflict endeavors to obtain a synthetic point of view of the problem rather than to fight solely for his own interests. Thus when the farmer, the city worker and the advocate of soil conservation realize that their opposing claims, when looked at from a long range point of view, merge in a general requirement for a permanently successful life for the whole community, it will be possible to approach a synthetic solution of the problem rather than a mere compromise. It was felt that Americans in general are at present far from taking such a synthetic





point of view.

5. Criteria for Estimating Agricultural Success. A great number of criteria were presented for estimating the degree of success achieved along the three lines, - (a) of maintaining a high standard of life on the farm, (b) of furnishing farm products at a low cost to the consumer, and (c) of preserving and improving soil fertility. Except in the case of criteria for judging soil fertility, it was evidently felt that it would not be possible to give a few, simple and reliable criteria for judging agricultural success. This was partly due to a feeling that the complexity of such a thing as agricultural success precludes simplicity in the criterion for its measurement, and partly to a feeling that, even if a successful criterion could be defined, satisfactory data for its use would be lacking. Under the circumstances, a large number of criteria were presented with the hope that the total picture thus obtained would be a fair one.

Some of the criteria presented could be used in judging the degree of success along more than a single one of the three lines, a, b, and c, mentioned above, but in what follows it will be convenient to treat these as separate criteria for judging the success along a single line.





6. Criteria for Judging Standard of Life on the Farm. The following criteria were suggested which may be used in obtaining an idea as to the standard of life on the farm.

- a. Total annual value of farm products, divided by number of agricultural population.

This figure must be corrected to allow for the changing purchasing power of the dollar, to allow for the share of agricultural product which goes to landlords, mortgage holders, bankers and others who are not reckoned as part of the agricultural population and who contribute in no direct way to the actual work of production.

- b. Value of yield per man hour of labor.

An excellent measure of the possible standard of life on the farm, provided too large a fraction of the yield is not diverted to landlords and others.

- c. Total value of farm land, buildings, stock and equipment divided by number of agricultural population.

This should be a possible figure to obtain.

If it is decreased by the total value of farm mortgages and by an estimated figure for the share of landlords, and then corrected for the purchasing power of the dollar, it should be an



excellent measure of the prosperity of the farmers.

- d. Value of farm mortgages divided by number of agricultural population.

A decrease in this figure is usually a sign of increased prosperity.

- e. Average length of farm tenure.

Short tenure means dissatisfaction with standard of life.

- f. Proportion of tenant farmers.

The more tenancy, the more product diverted to the landlord and the lower the standard of life on the farm.

- g. Average size of farms.

Very large farms mean large numbers of permanent or migratory workers with a low standard of life.

- h. Percentage of literates in farm population.

- i. Characteristics of average rural dwelling house, grade school, high school, hospital, church, conveyance (automobile), roads and trading center available to farmers.

#### 7. Estimates of the Standard of Life on the Farm.

Since the primary purpose of the memoranda was to suggest possi-





ble criteria for measuring agricultural progress rather than to make actual estimates, relatively little data was presented which illustrates the use of the above criteria. Nevertheless, some estimates of interest were made.

Referring to criterion (a), a table was presented from which the following can be calculated.

Year	Value of Agricultural Products Divided by number of Rural Population.
1890	\$ 60.40
1900	104.70
1910	181.20
1920	387.00

These figures are not corrected for the purchasing power of the dollar or the various other factors mentioned above, and further analysis would in any case be necessary to determine the significance of the figures. It hardly seems possible that the average rural inhabitant had only \$60.00 worth of product per annum available for his support in 1890. Large quantities of agricultural products may have been produced which did not get into the census figures.

Referring to criterion (b), it may be mentioned that statistics are available which show that in 1829-30, a man with a plow of that date, sowing wheat broadcast, reaping it with a





sickle, and threshing it with the flail expended sixty-four hours himself and used twenty-three hours of horse labor, in producing twenty bushels on an acre. In 1919 a farmer in Missouri working 15 hours himself with the up-to-date plow reaper and binder, and threshing machine, and employing 30 hours of horse labor, produced the same amount. That is, the man labor required to produce twenty bushels of wheat on an acre had been reduced to one-fourth by using improved machinery and a larger team. At prevailing wages in the two periods the laborer in 1829-30 would be compelled to work two days for a bushel of wheat, whereas in 1919 he could buy 2 bushels of wheat for one day's labor. The hired labor and machinery used in 1919 cost the farmer more than in 1830, but not four times as much.

Referring to criterion (d), the census of 1910 showed that 54% of the persons residing on farms had been on their land less than five years. This indicates considerable dissatisfaction with the standard of life on farms, and also precludes intelligent cultivation.

Referring to criterion (e), the opinion was expressed that a very large proportion of farmers are tenant farmers. No exact figures, however, were given. It was pointed out that improvements to land, barns or dwelling house made by a tenant



farmer accrue to the benefit of the landlor, thus taking away many incentives for maintaining a high standard of life on the farm. Attention was also called to the fact that the necessity of turning over a large fraction of the crop to the landlord is a serious psychological factor in discouraging the tenant.

Referring to criterion (f), the average size of the farms in the United States in 1910 was 138.1 acres, with 75.2 acres improved land and 62.9 acres of unimproved land. This means, in general, one family farms without great numbers of dependent farm laborers with a lower standard of life than the farm owners. Nevertheless, it must be pointed out that the really productive farms are in many cases much larger than the average. In some cases the work of a laborer on a large agricultural project provides no more opportunity for the development of those traits of independence, initiative and self-reliance, usually thought of as associated with agricultural life, than does the work of the factory operative.

8. Criteria for Judging the Cost of Agricultural Products to the Consumer. Much less attention was given in the memoranda to methods of estimating the success of agriculture from the point of view of the consumer of agricultural products.





The only method suggested for determining the cost of agricultural products to the consumer was to compare the standard of living of the farmer with the standard of living of the urban population.

Since in a satisfactorily organized society, the rural population and the urban population would both be essential for the complete life of the community, the opinion was expressed that the same standard of life should be available both to the rural and to the urban population.

In this connection it was suggested that a flow of population from the country to the city might be taken as an indication of a higher standard of living in the city which attracted the rural population. It was pointed out, however, that a mere increase in opportunities for city employment would lead to a flow of population from country to city without signifying an actual higher standard of life in the city, since members of the agricultural population, whose standard of living is lower than the average rural standard, would leave the country to go to the city even if the average standard of living in the city were the same as the average standard of life in the country, provided an increasing number of opportunities for city employment were available. It was also



pointed out that the flow of population from industries of low standard to those of a high standard of life is much restricted by ties of sentiment, ignorance of conditions prevailing in other industries, in ability to adopt a new trade, etc.

9. Estimates of Cost of Agricultural Products to the Consumer. No detailed estimates of costs of agricultural products to the consumer were presented.

With regard to the criterion described above, a successful organization of agriculture would imply the same standard of life for the rural and for the urban population. Dividing the urban population into industrial workers and the middle class (i.e. persons engaged in trading activities or living on unearned incomes) the general impression was given that the standard of life for the middle class is the highest, that of the farmers the next and that of the industrial workers the lowest.

Further estimates as to the success with which agricultural products are supplied to the urban population should certainly be made.

10. Criteria of Soil Fertility. From the point of view of posterity the increase in extent and fertility of arable land is of prime importance.

The extent of arable land can be taken directly from census reports.





It was felt that very satisfactory criteria of soil fertility have been developed. These are, -

- a. Chemical and physical analysis of soils.
- b. Yield per acre.

This latter can be determined most successfully by plot tests carried out in the usual manner, first tried in a systematic way at the Rothamsted Station. An idea of fertility for the whole country can be obtained from census reports which give the yield per acre.

11. Estimates of the Extent and Fertility of Arable Land. The figure of 478,451,750 acres of improved farm land was given as the extent of arable land in 1910. No figures were given for the change in extent from census to census but such figures are certainly available.

As to the yield per acre of crops it was pointed out that this decreased during the period of rapid expansion of agricultural lands from 1870 to 1885, but that since 1885 there has been a gradual increase in yield per acre, undoubtedly due to improved methods of agriculture rather than to increase in fertility.



As to the yield per acre per capita of the population, this has continually decreased since the earliest records of more than half a century ago. This fact seems to indicate decreasing fertility of the soil.

It was pointed out that the most serious causes of decrease in extent or fertility of arable land are "soil mining", "timber mining", especially when accompanied by soil erosion, the permanent destruction of soil fertility by commercial enterprises such as the gold dredging of California, and the more temporary destruction by the deposition of fume or dust from smelting and cement manufacture. Important increases in the extent of arable land result from irrigation projects and swamp reclamation.

It was pointed out that the use of certain commercial fertilizers such as deposits of potash, phosphate and nitrate merely transfer the exploitation of natural resources from the soil to the mineral bed. Such methods of maintaining fertility as the utilization of barnyard manures, rotation of crops, utilization of waste products, and the fixation of nitrogen involve no exploitation of natural resources.





12. Methods by which Agricultural Success may be Assisted. Many suggestions were made as to the methods by which the Department of Agriculture or other agencies can assist in developing a successful agriculture. These are listed below, -

- a. The diffusion of information and practical instruction among producers, to the end that efficiency and economy of production shall be more generally achieved.
- b. Facilitating the acquisition of the necessary factors of production so that the farmer may be able to obtain the use of land, labor, and capital at fair prices under conditions favorable to efficiency and to the harmonious relations of the various parties concerned.
- c. Removal of conditions which unnecessarily retard or prevent the acquisition of farm ownership by actual operators.
- d. Efforts to increase the ability of farm laborers to become farm owners.
- e. The conservation and improvement of agricultural land and capital.
- f. Preventing the agricultural development and settlement of submarginal and therefore uneconomic land.
- g. A more intelligent choice of the lines of agricultural production.
- h. The development of rational standards of saving and investment by farmers and farm laborers.
- i. The reduction of farmers' risks whether from water, insect enemies, plant and animal diseases or uncertain prices.



- j. The maintenance of conditions that permit the sale of agricultural products at fair prices.
- k. Supplying and interpreting information to producers, consumers, and intermediaries concerning the quantities and kinds of production and the demand at points of consumption, to promote a more correct and general understanding of the true relationship between demand and supply, to steady prices, and to reduce the uncertainties of the future in distribution.
- l. The performance of the service of transporting and marketing agricultural products, by cooperation or otherwise, at lower expense, considering the volume of goods and the quality of service.
- m. The development of rational standards of agricultural consumption.
- n. The promotion of diversification of production or consumption, or both, according to economic results.
- o. Introduction of new or improved breeds of animals and species of plants.
- p. The development of new uses for products, even by manufacture, as in the instance of milk, within the limit of economic results.
- q. Provision of telephones, mail delivery, better sanitation, better cooking and preparation of foods, better water supply, home and farm conveniences, social organizations, better housing, better school houses and better methods of instruction (school consolidation, introduction of work-study-play plan).





13. Discussion of Economic Struggle between Farmers, Industrial Workers and Middle Class. Some discussion was presented of the economic struggle between farmers, industrial workers, and the middle class, each to obtain a higher standard of living than the average.

It was pointed out that this struggle is partly a political one and that the political activities of farmers' organizations, trade unions, and chambers of commerce are an expression of the political side of the struggle.

In connection with this political struggle, attention was called to a natural advantage possessed by the farmers owing to the geographical basis of voting which leads to many districts with a large enough farmer vote to determine in an important manner the character of the candidate elected. The vote of the industrial workers on the other hand usually occurs in districts where it is so diluted by middle class vote as to be relatively ineffective.

Attention was called to the fact that the farmer's organizations are much less efficiently organized than the trade unions, and that the middle class, because of its central position in industry and because of its greater mental activity, has, on the whole, the controlling position in politics.





14. Conclusion. The preceding report has attempted to give a reasonable picture of the contents of the memoranda in question. It is realized, however, that some unintentional omissions may have occurred.

It seems evident that considerable further work will be necessary in order to make the survey of agricultural success as useful as possible.

It would seem as if attempts might well be made to select from the criteria for judging the standard of life on the farm those which seem most satisfactory both from the point of view of their significance and the point of view of the data available. These should then be presented, together with data for as many census periods as may be possible.

Better criteria for estimating the cost of agricultural products to the urban population should be found and data concerning this factor assembled.

Data as to the extent and fertility of arable land should also be assembled.

